

A Program Master Schedule Can Improve Results

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**“There cannot be a
crisis today; my schedule
is already full.”**

—Henry Kissinger

Scheduling from a Government Perspective

Schedules are important. As government acquisition officials, we want things delivered at the time we agreed they would be delivered and for what we agreed to pay. We want to know whether something is going to be late or over cost. Contractor-delivered schedules can help the government program manager (PM) answer some of these important questions. However, a contractor schedule rightly focuses only on contract scope and not on the entire program picture.

A successful government PM must maintain and share situational awareness (SA) across the entire program and its environment. This requires visibility beyond contract scope, from budget drills to congressional inquiries to warfighter requirement changes and everything in between. Government acquisition programs are complex systems highly sensitive to emerging conditions and dependencies among multiple elements. It is an exceptionally challenging, but not impossible, task for a government PM to maintain SA. In other words, it is awfully hard to keep track of everything, let alone predict what might happen at any point in time.

A well-built and believable dynamic model that is of practical use provides a powerful tool to support PM decision making. To enable this, the government program management office (PMO) can employ its own program-level schedule. To distinguish this from the contractor's schedule, let's call this a "PMO Integrated Master Schedule (IMS)" or "PMO IMS." A PMO IMS helps the government PM to maintain SA and make informed

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"I am not sure where we are, but we are making good progress."





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decisions. While this article won't be the "final word" on a PMO IMS, it will highlight desirable PMO IMS characteristics and important PMO considerations.

Desired Characteristics

A dynamic model reflective of best scheduling practices

We build models to represent reality in ways we can understand and use for making decisions. Typical acquisition models are used to depict aircraft flight, radar propagation, heat signatures, reliability, cost relationships and so on. A schedule models a program by depicting the duration of and relationship among the program-specific tasks that constitute the required work. Since actual performance will differ from parts of the initial model, this schedule must also be dynamic or changeable in order to characterize the program accurately over time.

Thus a PMO IMS must be built in such a way that it reasonably represents the program and can keep pace with its evolution. Use of proper schedule construction mechanics—like those described in references such as the *National Defense Industrial Association Planning and Scheduling Excellence Guide*, the Defense Contract Management Agency's "Fourteen-Point Assessment," and the draft *Government Accountability Office Schedule Assessment Guide*—lays the groundwork for effective dynamic modeling of programs. These are frameworks forged by subject matter experts who successfully applied scheduling to project management. Inattention to best practices like these puts the schedule on the fast track to irrelevance, at best out of date before the ink dries. Poorly constructed schedules become little more than "to do" lists or expensive calendars incapable of providing SA.

Well-built schedules can depict more than program status. They are also predictive. Schedules help the government PM anticipate changes and consider "what-if" scenarios on demand, because dynamic modeling allows individual task dependencies, current status and individual forecasts to be overlaid and projected in a program context. Commercial scheduling software is uniquely capable of doing this in repeatable and reliable fashion. However, scheduling software

doesn't always produce the "pretty" pictures preferred for briefings, so PMOs often rely on static pictures and Gantt charts available on presentation software such as Microsoft PowerPoint. That's fine—and often necessary—for clear communication. However, over-reliance on eye-pleasing graphics risks projecting a false impression of SA over a dynamic process.

Believability

Robust dynamic modeling lays the groundwork for an effective PMO IMS, but there is more work to do, and it takes more than the scheduler to make it happen. Program team members and stakeholders most familiar with the work and program-unique environment are best suited to judge how accurately an IMS depicts the program. These same individuals also need to assess external information affecting the PMO IMS, such as that coming from the contractor.

A scheduler should sit down and talk with other team members; the scheduler's initiative and interpersonal skills go a long way toward ensuring the PMO IMS remains accurate and relevant over time. However, team interaction is a two-way street. The other PMO members must help create, scrub and continually update the schedule in order to trust the information it provides. A team-built and team-operated PMO IMS replaces a program picture characterized by multiple individual snapshots with a single picture composited from various contributors. Team ownership paves the way for "buy-in" of schedule information.

Practicality

The schedule ought to provide actionable answers to questions like these:

- What work must be done, and when?
- Who is doing the work, and when?
- What is happening right now?
- Where are we going?
- What risks/opportunities do we face ahead?
- When will we be done, and how do we know?

Answering the above questions requires inputs from and integration of a variety of sources in order to ensure that schedule information provides robust SA. These include requirements documents, statements of work, product work breakdown structures, organizational breakdown structures, risk register inputs, integrated master plans and technical performance measures, to name a few. Schedulers with a strong project management background are critical because they grasp the individual contributions of these sources, recognize when information from a given source is missing or of questionable value, and take action to correct the situation without prompting.

The PMO IMS does not need to be huge, but it should "pull" information that enhances the government PM's SA at any given time. A contractor might produce a 15,000-line

schedule in order to cover its contract scope and associated tasks, but the associated government PMO IMS might only be 200 to 300 lines. A PMO IMS might expand in some sections to provide detailed insight into high risks but remain more general for low risk areas. It will also expand and contract in size over time as the program evolves. External events or inputs that might influence the program are always included, along with key risk-handling efforts and decision points. Getting a usable PMO IMS off the ground takes thought and hard work, but it should not take weeks of effort at inordinate expense.

PMO Considerations

Integrating schedules is complex but rewarding.

A lead PMO scheduler typically faces integrating schedule information from multiple sources, including contractors and stakeholders. If a PMO integrates related but different schedules produced by different people, then it creates a scheduling system. Integration—especially automated integration—is easier said than done. Therefore, a PM should consider the following:

- A common program and scheduling language
- Shared desktop procedures (how an individual creates and maintains a schedule)
- Compatible data used in the various “fields” within scheduling software
- Identical scheduling software (Project, Primavera, Open Plan, etc.)
- Shared ideas of what constitutes healthy schedules (e.g., practical, believable, dynamic models)

Unsuccessful scheduling systems drive schedulers to spend much of their time diagnosing and fixing schedules, which means little attention is spent analyzing and evaluating program execution. This, in turn, jeopardizes the PMO IMS ability to support the PM.

Schedule integration is a systemic challenge, and it therefore requires a systemic response. Paying attention to the individual considerations shown above is one thing. Enforcing all of them across a diverse set of organizations and schedulers is another matter entirely. Server-based scheduling tools can help to a degree, but they do not compensate for poor scheduling discipline, lack of believability and/or poor communication. As the saying goes, garbage in equals garbage out. On the other hand, successful multi-schedule integration is a powerful “force multiplier” for program SA. It frees valuable time for analysis, synthesis and evaluation of schedule information. As a result, effective PMO IMS information can be made available in time for a PM to make proactive decisions.

Knowledge of a commercial scheduling tool does not solely define the PMO IMS scheduler.

True, a scheduler should be familiar with the nuances of the scheduling software used by the program and have a firm grasp of scheduling-discipline fundamentals. It takes time to develop a skilled, professional scheduler based on published

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professional guidelines: There simply is no way around that. Expectations for professional schedulers are best defined within the context of industry certifications such as the American Association of Cost Engineers Planning and Scheduling Professional and the Project Management Institute Scheduling Professional. However, schedulers are not simply “tool jockeys.” Schedulers also must have a firm command of project management theory and practice, because the PMO IMS must be both believable and of practical use to the government PM. Leadership and interpersonal and communication skills in the lead scheduler also are critically important.

A good PMO IMS scheduler has his/her “finger on the pulse” of the program at all times, and doing so requires an individual with a balanced set of skills. It is important for a scheduler to be adept with scheduling software and discipline, but not entirely at the expense of the other demands of the job. At times, it is far more important to have the PMO team sitting around a table engaged in thoughtful and facilitated discussion on schedule risk than having the scheduler spending those hours figuring out how to resource load the PMO IMS. The PM should not think of the scheduling position as something that can be filled only by an experienced, certified scheduling professional. There is more to scheduling than running software. The PM should consider filling the scheduling position with a talented individual as soon as possible and “growing” that individual over time in scheduling, project management and/or leadership as required.

The effectiveness of the PMO IMS ultimately hinges on the government PM’s leadership.

The government PM must lead the PMO team to use and maintain a PMO IMS effectively. This requires the following:

- The PM must ensure that the lead scheduling position is staffed by a high-quality individual who either already has the requisite skill or in whom the PM is willing to invest time, resources, and mentoring to develop the necessary skills.
- The PM should know what key questions need asking to ensure that best scheduling practice is employed. This requires the PM to be conversant (not a subject matter expert) in salient aspects of schedule construction and discipline.
- The PM must lead the team and ensure the schedule is built and maintained in a joint, multifunctional fashion. This might involve guiding team members outside their comfort zones.
- The PM must proactively shape the schedule as a decision support tool, rather than be a passive observer and/or recipient of scheduling information. The PM should work with the scheduler to “pull” the information needed to make informed decisions.
- The PM must also empower the scheduler to create an effective scheduling system. The scheduler does not have a single “swim lane.” The scheduler swims in every lane. Building a scheduling system often requires crossing boundaries, and a lead scheduler needs the trust and authority of the PM to make that happen.

No matter how believable and practical the PMO IMS might be, it has little value if the government program team does not use it. The PMO IMS must be “owned” by the government PM because the program team will typically take their cue from the PM. For example, consider a PMO IMS schedule risk analysis (SRA). An SRA should never be performed alone by the scheduler. An effective SRA requires the scheduler, team leads, subject matter experts and risk owners to work in concert; the PM should set the tone for that effort. The PMO

IMS needs to be a prominent fixture within the PM’s decision process and part of the language used by the PMO teams to convey status, predictions, strategies, risks and opportunities.

So What?

A government PM needs a mechanism to collect and sift through important tactical information in order to remain focused on the big picture. To borrow from aviation parlance, you cannot maintain effective SA if your head remains buried inside the cockpit. If the PMO IMS provides robust and actionable answers to key performance questions—How are we doing? When are we done? What lies ahead?—the PM does not have to spend an inordinate amount of time trying to investigate and answer those questions. This frees time for the PM to think and act strategically, “pulling” PMO IMS information as needed to support SA and decision making.

The PMO IMS is a communication tool that helps the PM make informed decisions and enables the government PMO to maintain a proactive stance. While this article offered a set of considerations, rarely will all be achieved at once in a PMO. It takes effort to develop, and keep, talented schedulers who create and maintain robust schedules, but that’s not a reason to delay investment of time and energy into a PMO IMS. It must be kept in mind that building and sustaining a PMO IMS is not an end in itself. Ultimately, a schedule must help the PM make decisions about the program. Thus, a simple but useful schedule today is better than the detailed and perfect schedule next month. Time is money. Make the PMO IMS a critical contributor to decision making in your program office.

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MDAP/MAIS Program Manager Changes

With the assistance of the Office of the Secretary of Defense, *Defense AT&L* magazine publishes the names of incoming and outgoing program managers for major defense acquisition programs (MDAPs) and major automated information system (MAIS) programs. This announcement lists all such changes of leadership, for both civilian and military program managers for the months of September and October 2013. (Some program managers listed took the position earlier than September but were missed by the Service in their previous input.)

Navy/Marine Corps

Capt. Michael N. Abreu assumed the position of program manager for the Naval Enterprise Networks Program (PMW 205) on Oct. 7.

Karen Davis relieved **Capt. Patricia Gill** as program manager of Advanced Technology (PEO [IWS]) on June 10.

John M. Garner relieved **Col. John K. Buckles** as program manager of Advanced Amphibious Assault (PEO [LS]) on July 10.

Air Force

Col. Christopher Coombs relieved **Col. Shaun Morris** as the ACAT ID systems program manager for the KC-46 Tanker Modernization Program on Oct. 1.

Col. William Leister relieved **Col. Christopher Coombs** as the ACAT IC systems program manager for the MQ-1 & MQ-9 Unmanned Aircraft Systems Programs on Oct. 1.

Lt. Col. Kevin Sellers relieved **Lt. Col. Brian McDonald** as the ACAT ID program manager for the Three-Dimensional Expeditionary Long-Range Radar (3DELRR) Program on Aug. 2.

Col. Gregg Kline relieved **Col. Margaret Larezos** as the ACAT IA systems program manager for the Air and Space Operations Center Weapon System (AOC WS) Increment 10.2 Program on July 31.